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ABSTRACT

The objective of the Stanford evaluation team was to identify philosophical and conceptual, as well as technical, considerations which might guide the evaluation of the proposals made by the nine USOE-funded elementary teacher training models. The nine models were studied intensively by sub-teams, discussed and criticized by the entire team over a period of three months, and further explored in consultation with representatives of each of the models in a two-day conference. This report is organized to present (1) general comments involving perceived strengths and weaknesses of all of the programs and (2) analyses of each of the nine models in relation to certain persistent questions. Major issues treated are individualized instruction for prospective teachers, modeling behavior, systems analysis and computer technology, behavioral objectives, coalitions, and innovations and change. Although the overall evaluation of the models is positive, the emphasis of the report is on restating and responding to eight questions which make explicit certain normative issues which have fundamental practical consequences for program design and implementation. It is the continuing examination of these questions (e.g., "Does it make a difference whether a program takes its departure from a holistic orientation or an atomistic one?") which the evaluators believe ought to be the first concern of the educators of teachers in their evaluation and/or use of the teacher education models. (Author/JES)

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THE STANFORD EVALUATION OF NINE ELEMENTARY TEACHER TRAINING MODELS

(Project No. ~~081710)~~

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Fannie R. Shaftel

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Fannie R. Shaftel
Stanford University
School of Education
Stanford, California

August 25, 1969

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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ABSTRACT

The purpose of the Stanford Evaluation Project was to evaluate the nine elementary teacher training models funded by the United States Office of Education as Phase One of that program. The evaluation was done by a team of experienced educators who are doing advanced graduate work in the School of Education, Stanford University, under the direction of Dr. Fannie R. Shaftel, Professor of Education and an Associate of the Center for Research and Development in Teaching of the Stanford School of Education.

The nine models were studied intensively by sub-teams and discussed and criticized by the entire team over a period of three months. They were further explored in consultation with representatives of each of the models in a two-day conference.

The objective of the Stanford evaluation team was to identify philosophical and conceptual as well as technical considerations which might guide the evaluation of proposals for the preparation of elementery teachers. This report is organized to present (1.) general comments involving perceived strengths and weaknesses of all the programs and (2.) analyses of each of the nine models. Certain persistent questions are identified and the major issues treated are (a.) individualized instruction for prospective teachers, (b.) modeling behavior, (c.) systems analysis and computer technology, (d.) behavioral objectives, (e.) coalitions and (f.) innovations and change. Key questions are raised which are listed below:

1. Should a proposal for the education of elementary teachers grow out of a conception of childhood? How might the priorities

for childhood education differ from priorities for other age levels?

2. What is meant by "individualizing the curriculum" -- whether for the future teacher or the child? What conceptions of individualization pervade these programs? Are they comprehensive of this theme?

3. Do the programs adequately confront the dual task of socializing future teachers into the realities of the educational system at the same time that they prepare them with skills to challenge and change the system?

4. Are behavioral objectives a comprehensive way of defining the tasks of an educational program? Does the sum of behavioral objectives equal the whole of teaching? Are there other objectives which need to be included which do not lend themselves to behavioral expression?

5. Are there limitations to systems analysis which must be considered in determining its utility and value in education?

6. How do the programs confront the realities of the new coalitions in communities? What guidelines are developed for reconciling professional goals with community goals?

7. Does it make a difference whether a program takes its departure from a holistic orientation or an atomistic one? If it does make a difference, what are the implications for teacher education? How prescriptive can and ought a teacher training program be?

8. Is the provision in all of the models for the processes of change enough, or should the programs also be concerned with socially responsible change? How can the tension between education as cultural transmission and education for socially responsible change be resolved?

THE STANFORD EVALUATION OF
NINE ELEMENTARY TEACHER TRAINING MODELS

Fannie R. Shaftel

Final Report

The following report is the product of a team evaluation of the nine elementary teacher training models that were selected for funding for Phase I of the project on elementary teacher training of the United States Office of Education.

This particular evaluation grew out of conversations between Dr. Robert N. Bush, Director of the Stanford Research and Development Center on Teaching of the School of Education, Stanford University, and certain officials of the United States Office of Education. Professor Bush at that time proposed to give the nine models careful study in his graduate course on teacher education with the active assistance of doctoral students with special interest in teacher education.

When Professor Bush was forced to take a leave for health reasons, he asked Dr. Fannie R. Shaftel, Professor of Elementary Education and an Associate of the Research and Development Center to take over the evaluation.

Professor Shaftel enlisted the efforts of a group of experienced educators who were enrolled in advanced degree work. Participation was completely voluntary and reflected high interest in the models and in the improvement of teacher education.

The Evaluation Team

In a profession that brings experienced educators back to graduate schools of education for advanced work, the term "graduate student" masks a range of rich and varied professional experience. Our team, we feel, had particular strengths in its variety. Represented were elementary teachers and an elementary principal, a county curriculum consultant, a school community relations worker, a school plant planning consultant, several teacher educators, a secondary teacher and a secondary school administrator, a director of planning for education and manpower in Micronesia and, our youngest member, a Masters Degree candidate who was our "experienced student". The collective experience of this group was an invaluable crucible in which to test ideas.

In addition, we were especially fortunate in having Professor Stanley Clark of the University of Alberta as a visiting scholar at our Research and Development Center. Dr. Clark had made an intensive study of the nine models at the United States Office of Education in Washington and generously contributed his wisdom to our sessions.

We defined our task as that of identifying philosophical and conceptual as well as technical considerations which might guide the evaluation of any proposal for the preparation of elementary school teachers. What should be the priorities in this preparation? Is the preparation of teachers of young children somewhat different than that for the junior and senior high schools? In what ways? Do teachers have changed responsibilities in relation to decision-making in a time of fundamental social change? These and similar questions emerged as we worked.

Work Procedures

The team evolved a set of working procedures that proved to be most stimulating intellectually and at the same time highly productive.

The model programs were assigned to sub-teams for detailed study. It was agreed that at least two, preferably three, team members would know each program in great detail. Each team prepared a basic abstract of the models it was responsible for.

The entire team met in seminar sessions twice a week to listen to presentations of each model which they had reviewed before the presentations. At these sessions the basic plans for a model were discussed intensively, the sub-teams acting as proponents of their models, the rest of the team asking probing, critical questions. The discussions were fervent, often argumentative. The range of personal views, theoretical commitments and intellectual styles of the team members emerged quickly and the seminars became professional confrontation sessions in which we began to modify each other's views in some instances and to clarify and strengthen personal convictions in others. These were very stimulating experiences! Everyone agreed that this process was a rewarding way to grow professionally.

Out of these seminars there gradually emerged a group of persistent questions that everyone agreed upon as common concerns. These are dealt with in the Overview Section which follows on page 8.

The Conference

After several months of continuous work, the team met in a weekend conference with a representative from each of the nine models and with

Miss Shirley Steele from the United States Office Education, and Dr. Stanley Clark.

This conference was planned as an opportunity for the evaluation team to explore with the model builders the intent and technical details of their models. It was to serve as a means to further understanding of the models. The men who came were most generous in sharing their ideas and in participating in a very open exploration of the views of the evaluation team.

The original conference schedule was to run as follows:

SATURDAY	9:00 a.m.	Opening Remarks: Dr. Fannie Shaftel, Chairman of the Conference Spokesmen for the models, speaking to the question: "What do you consider to be the chief strength of your program?" Respondents: The Stanford Study Group
	11:00 a.m.	Small group explorations: representative and evaluators for each model
	1:30-4:00 p.m.	Persistent Questions: presented by the Stanford group to the spokesmen
SUNDAY	10:00 a.m.	A Panel: The model builders The Task: You are a new team assigned to construct a new elementary teacher education model. There are no guidelines! Respondents: The Stanford group You may ask questions, make comments, plead for inclusions.
	11:30 a.m.	Closing Remarks: Miss Shirley Steele, United States Office of Education

The representatives of each model were :

Dr. James Cooper
University of Massachusetts

Dr. George Dickson
The University of Toledo

Dr. W. Robert Houston
Michigan State University

Dr. Bruce R. Joyce
Columbia University

Dr. Horton C. Southworth
University of Pittsburgh

Dr. Gerald M. Reagan
Syracuse University

Dr. Charles E. Johnson
University of Georgia

Dr. H. Del Schalock
Oregon State System of
Higher Education

Dr. Wesley Sowards
Florida State University

The Stanford group members were:

Frank Brunetti
Dorothy Evans
James Hawkins
Gregory Hearn
Donald Herzer
Barbara Hunt
Mary Lawson
Nancy McConnell
Sheila Molnar
Judith Ramirez
Thomas Roberts
Peggy Sahlberg
Sister Mary Peter
Jane Stallings
Priscilla Stam

The following were the persistent questions that had emerged from our seminars and were presented to the model builders:

1. Of the many decisions made by the model builders, one of the most fundamental was whether to project the future shape of society. Should a teacher education program take a position on social issues and prepare its teachers to act as change agents on behalf of that position?

2. To what extent should the objectives of a teacher education program be designed in behavioral or performance terms?

3. What contributions can systems analysis make to a teacher education program. Are there limitations placed on programs through systems procedures?

4. What are the ramifications of using a single psychological position or learning theory as a framework for a program? Is is possible or desirable to be eclectic?

5. Modules were adopted in many of the models in order to provide flexibility and individualization.

> How can the pre-test, mastery learning, post-test format have other than convergent outcomes?

In what ways can a sense of community be fostered in a highly individualized program?

6. How do conceptions of the young child influence the design of teacher education programs?

7. To what extent should groups such as school boards, teachers' organizations, student groups be involved in determining teacher education programs?

8. Most of the models say something about the student as a developing human being. Concepts such as "self-directed", "self-aware", "self-other affective development", "integrated, unique, personal teaching style", "empathy", etc. What is meant by these concepts? We are concerned about the evaluation of such personal development of the trainees. It is possible that all of the programs might end up with positive evaluations (in this general area) of the more accepting, even conforming students, and negative evaluation of students with the confidence, self-awareness, adequacy of self-concept and critical thinking abilities to truly challenge the entire program under which they are being trained. Is this a moral issue as well?

9. Can anyone become truly autonomous through a totally prescriptive program? To what extent should the individual determine his own objectives and plan his own learning, and to what extent is this possible within the various models?

10. Should the models prepare teachers for coping with the pressures of teaching in actual schools as they are today (inner city schools, for example) as well as for the future? Should these programs also include training in resistance to occupational socialization?

11. Should we be concerned with teaching future teachers in such ways as to provide models for them?

The group sat around a horseshoe table with about twenty-five people taking part. The conference went as planned on Saturday morning, evidently running smoothly and successfully. After lunch, however, when the talk resumed, the atmosphere changed somewhat. The two groups did not seem to be expressing openly either their feelings or their opinions. This situation was faced and discussed. There was an effort made to evaluate and replan. There seemed to be agreement that a number of issues were emerging in the conference. Four that were identified were:

1. Does it make a difference whether a model is built from a holistic or an atomistic view of the task?

2. What are the contributions and limitations of behavioral objectives?

3. What is the appropriate use of the systems approach in education?

4. What are the implications of the concept of coalitions education?

The schedule was then changed in order to allow for more interaction among the group members, and the panel discussion originally set for Sunday morning was eliminated. The new plan was to divide the large group into two smaller groups with a chairman at each table, centering the discussion around the four questions which had been posed toward the end of the Saturday afternoon session.

The discussion on Sunday morning was animated and intense which was in contrast with the day before. We found that all the participants had very similar, general goals in common; the disparity that the Stanford group found was between the concerns which the consultants voiced and the somewhat cold, organized picture which the models as a whole presented. More succinctly, there was a great contrast between the expressed ideals and the documents we had read which represented the models.

The Sunday morning sessions were a great success. The four issues identified the day before were explored intensively. We ended the sessions with feelings of deep appreciation for the professional commitments and goals of the model builders and a realization of common concerns. The evaluation team felt that they now understood the models a great deal better than they had before.

The Evaluation Report

This evaluation is organized to present an overview of general comments which are drawn from all the nine models and specific analyses of each of the models. In the overview initial comments are of a positive nature, emphasizing the strengths of the programs. These remarks are followed by the presentation of certain persistent questions that emerged from the discussions of the individual models.

The models for teacher education developed under the auspices of the United States Office of Education attempt to break free from many of the constraints of current teacher training programs. As the evaluation team became acquainted with the models and some of their designers, we were heartened by their commitment to the task, their willingness to reassess and modify the models, and their openness in confronting some of the fundamental issues underlying teacher education. We applaud these attitudes; much that was praiseworthy in the models stemmed from them.

First, we are impressed by the effort to unlock the curriculum by substituting, for the traditional course framework, module structures and variable pacing which permitted flexibility in designing individualized programs. Second, we find great value in the intention to teach prospective teachers as they themselves would be expected to teach. Third, we see in the systems approach, in the sophisticated employment of computers, and in the use of simulations, powerful tools; these tools would make feasible truly individualized programs and both formative and summative evaluation. Fourth, the value of behavioral objectives in focusing attention upon observable teacher behaviors is demonstrated in the models. Fifth, the attempt to build coalitions among teacher training institutions, the public schools, research organizations, industry, and the community takes cognizance of the need for more broadly based participation in the training of teachers. Sixth, the models take a dynamic approach by focusing upon the processes of innovation and change.

Individualized Instruction for Prospective Teachers

All of the models attempt to individualize instruction for teacher trainees. The means of individualization are variable pacing, individualized courses of study, and variable entry points into programs. Each of the models employs one or more of these means.

Variable pacing in a program makes it possible for one student to finish in two years what is normally a four-year course of study, while another may take as long as six years to meet the same criteria. This flexibility certainly should mitigate the problems inherent in having a wide range of student ability and experience. Quicker students will be less likely to become bored while slower but still able students will be less likely to be forced out by undue pressure.

Where individualized courses of study are employed, students are given a number of options by which they may satisfy a common criterion. The student, along with his advisor, chooses that course of study which best fits his idiosyncratic needs, abilities, and interests. The student's sense of participation in determining his program and its relevance to him are thus enhanced.

Those models which provide variable entry points allow a student with a rich background or unusual ability to demonstrate it by meeting the performance criteria for those areas in which he already has mastery.

If the criteria for an area are met, the need for training in that area is obviated. This practice should reduce student boredom and needless waste of effort for both students and faculty.

The most desirable potential outcome of individualization is that it gives the student the feeling that he is being treated as a unique human being. In short, it breaks out of the lock-step approach to education and thus should humanize the training of teachers. Because the organizational problems raised by individualized instruction can be staggering, its success depends largely upon sophisticated use of computers for scheduling. It should be recognized, however, that computer schedules could, if rigidly used, become a straight-jacket that defeats the goal of individualization.

Modeling Behavior

A recurrent theme in the proposals is the desire that instructors in the program model the teaching behavior the students are expected to learn. The implication is that professors will lecture less and work more with small groups and individuals. We find it eminently reasonable that teachers of teachers serve as models for their students.

Most of the models discuss the necessity of retraining many staff members so that they can function successfully in what will be, for most of them, a new format. This anticipation of implementation problems is realistic. Yet staffing the programs with skilled and sympathetic teachers is a virtual *sine qua non* for the success of the models.

Systems Analysis and Computer Technology

All of the models employ systems analytic methods to some degree. Given the large number of variables involved in teacher training, a more controlled, systematic mode of organization than that historically employed in the university is crucial if teacher training is to be improved and individualized. Systems analysis provides an organizational and analytical tool which can be well suited to this task.

There are aspects of the models (i.e. individualization and adaptation) which would simply not be feasible without the support of systems analysis and computer technology. The scheduling problems alone for an individualized, variable entry program which also includes field experience are immense. We feel that systems analysis and computer technology generally have served to reduce logistic barriers, making it possible for the model builders to attempt innovations that would otherwise have been impossible.

Behavioral Objectives

The use of behavioral objectives to specify the desired outcomes of the models focuses attention upon the observable. Narrowing the focus to specific, observable behaviors can without question increase the efficiency of some types of learning. No longer need students concentrate on learning the idiosyncracies of the professor or memorizing a mass of material in the hope that some of it will be covered in the final examination. Facile verbalization need no longer be a substitute for the understanding demonstrated by performance criteria. Attention to behaviors as indicators stresses the active process of teaching and learning. Without such indicators, teaching and learning tend to be described in vague, overly-general terms. Insofar as it is possible, the description of objectives in terms of specific behaviors can reduce the vague, global statements that so often characterize evaluations of teaching and learning.

Coalitions

In most of the models there is an effort to promote greater continuity between the training experience and the actual professional experience through a variety of schemes for collaboration between the teacher training institution and surrounding school districts. Some models include in their design inter-agency coalitions in which the teacher training institution shares responsibility for planning and evaluation with the many policy making groups who are exerting influence on education at local levels. These projected coalitions demonstrate a broader and more inclusive approach to the problem of teacher preparation in a changing society. If teacher education institutions are to increase their contribution to the direction taken by public education, the gap between the world of the academic and the world of practice must be bridged. The coalitions and collaborations proposed in several models are a step in that direction.

The coalitions have the potential to promote innovation in teaching and to involve more practioners and other community representatives in teacher training and meaningful in-service education. The collaboration of the university and local school districts can provide impetus and support for innovations which might otherwise meet with resistance. Planning and evaluating with school districts can also insure contact with the "real world" of the schools for students and university staff.

Innovation and Change

All of the models emphasize adaptation and innovation within their own programs and by their students. The problem-solving paradigm permeates the models. Cybernetic loops in which a goal is set, an activity is undertaken, performance is tested and evaluated, and feedback is given, appears in most of the models. This adaptive, seeking mode of operation stresses innovation and feedback. Many of the models have already demonstrated effective use of feedback through substantial improvements in design in response to feedback received during the development of the proposed models. If this kind of inquiry and adaptation is continued, it will serve to insure improvement of the programs and to exemplify a very desirable mode of behavior for trainees.

Summary

Our overall evaluation of the models, then, is positive. Yet certain persistent questions intrude upon this generally favorable reaction. These questions seem to us ones which any educator of teachers must grapple with. Many of the model builders have wrestled with one or more of these questions and have found tentative answers. Although these solutions have yet to be tested in practice, they promise well for the future. However, we think that these questions are worth repeating, for in the asking, certain normative issues which have fundamental practical consequences for program design are made explicit. The questions and our responses to them follow. We hope that this section will spark further discussion of these questions and contribute to the thoughtful, free-ranging examination of those normative issues, an examination which we believe ought to be the first concern of the educators of teachers.

1. Should a proposal for the education of elementary teachers grow out of a conception of childhood? How might the priorities for childhood education differ from priorities for other age levels?

We were struck by the absence of the child in these models. We would ask, "What is the nature of elementary education? What is childhood about?" These questions suggest a basis from which to build teacher education proposals which is fundamentally different from those for older children and youth. Most of the models begin by defining the optimum characteristics of the elementary school teacher and by identifying the behaviors to be mastered. As an alternate approach, we would suggest that elementary school teachers be prepared to facilitate the growth of self-actualizing individuals by attending to the developmental needs and characteristics of children and to their rights as persons. Too often, it seems to us, children are conceived of as raw material which, when subjected to intensive skills-oriented and cognitive-dominated training, can be processed into technologically sophisticated adults. We miss a sense of childhood as a time to grow and to explore the world through play and imagination as well as formal study.

Not only social imperatives, but the needs of the growing child must be considered. Underlying most of the programs is the assumption that subject specialist teachers, team teaching, and open schools as now used are appropriate to the elementary school; high priority is given to implementing these innovations. It could well be argued that program designers might better begin by looking at childhood-in-society and shape the curriculum, the school organization, and teaching strategies to fit the developmental needs of children. Many programs have adopted one model of teaching -- team teaching by specialists -- without adequate consideration of alternative paradigms. Team teaching has been described by one educator as a corporation model designed to produce a product --

the efficient learner of certain skills and knowledge.[1] Is this a desirable model? Some educators, including many on the evaluation team, would argue that there are other priorities to be met in the education of the young.

Similarly, how many different specialists does the young child need? Does he need a school community -- a continuous relationship for a major part of his day with an affiliative group and an adult who knows him well and builds continuity into his experiencing? We would argue that most models ignore the need for affiliative relationships for the young child by the adoption of staff utilization schemes that eliminate the possibility for group life in which deep and continuing relationships are nurtured. The use of sensitivity training as a technology would appear insufficient to this need.

> 2. What is meant by "individualizing the curriculum" -- whether for the future teacher or the child? What conceptions of individualization pervade these programs? Are they comprehensive of this theme?

The view of individualization found in most of the models is one prevalent in education today. In this view individualization is seen as a charting of individual paths to predetermined goals. The rationale for this type of individualization is efficiency in learning. Individualization can be more broadly conceived. Individuality emerges out of membership in a community. In sharing experience, in collaborating, in tackling mutual problems, the individual comes to know when to stand with the group and when to stand for himself. The individualization commonly found in the schools and implicit in some of the models for teacher education denies this opportunity to develop self-identity through meaningful interaction with others.

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[1] Joseph C. Grannis, "The School as a Model of Society", Harvard Graduate School of Education Association Bulletin, v. 12, no. 2 (Fall, 1967), pp. 14-27.

Furthermore, the development of intellect and values, it can be argued, needs the carefully planned and guided group experiences in which personal confrontations and conflict resolutions are used as tools for discovering and developing one's own values and commitments. If this position is valid, then the schemes for individualization presented in the models appear far from adequate. For the most part, the models have dealt with the more obvious problems of prospective teachers in pacing and selecting specialized fields. More idiosyncratic aspects of individualizing are not considered. Consideration of the variety of ways in which people process information and the developmental changes in these processes is almost entirely lacking in most of the models. Without training in this area, it would seem almost impossible for teachers to select appropriate strategies of instruction for individual children.

> 3. Do the programs adequately confront the dual task of socializing future teachers into the realities of the educational system at the same time that they prepare them with skills to challenge and change the system?

There are two central issues which fall under the rubric of socialization. One concerns the role of the teacher in the school, the second involves consideration of the function of the school experience for the child in society.

(1.) By occupational socialization is meant the process by which a new member of an occupational group comes to identify with and accept the values, norms, ideas, procedures, etc., of his professional peer group. The process has been the subject of extensive study in sociology. Identification with and acceptance into professional groups seem to occur eventually even in situations where there is absence of overt pressure towards conformity. Those individuals who find too much conflict between their own previously developed norms and those of the new groups will be likely to leave the profession. The apparent necessity to adopt as one's own the culture of the professional peer group seems to be an extremely strong force in the professional lives of new members. The urgency for such acceptance may impel a sweeping re-organization of value priorities or even complete rejection of certain values.

The phenomenon of occupational socialization presents particular problems in the teaching profession since there is a tradition of conflict between the "academia" of training institutions and the public schools. All too frequently the teacher-candidate's excellent training is thoroughly transformed in interaction with the actual school culture. Such transformation may lead to overt rejection or reinterpretation of the meaning of certain values developed through education where such reinterpretation is tantamount to rejection.

In general, little direct attention is given to the problem of occupational socialization in most of the models. Several models suggest creation of special institutions which would provide support for the values of the new teacher (portal schools, coalitions). Even those models do not attempt to develop resolutions for the more general problems of socialization in more typical schools. Yet the majority of graduates from most training institutions will continue to take positions in more traditional schools where the conflicts between school culture and academic training are likely to be the most extensive. One model does attempt to find a viable solution with the development of the "reference group", a group with which the individual has such strong identification that he will, even after the group ceases to exist as a working entity, continue to give its values highest priority. However, studies of occupational socialization suggest that the likelihood of the culture of even a deliberately planned reference group surviving the forces of occupational socialization is quite small.

While no formula exists for teacher training institutions to use in attempting to cope with the problems of occupational socialization, there is also little attempt in the models to experiment with and to develop improved methods of meeting the problem. An example of such an approach would be the utilization of such techniques as simulation and role-playing to help the candidate to (1) become aware of his own value system, (2) become very familiar with the social structure of the "traditional" school, and with the pressures under which teachers and administrators work, and (3) learn skills for understanding and meeting the problems inherent in the professional culture of the school so as to preserve the values which the candidate has consciously determined for himself.

(2.) There is a growing controversy over the role of the school in society. Education has functioned for centuries, perhaps millenia, to socialize the young into the adult society. The rapidity of social change in present society has created an awareness of new difficulties in carrying out that function: the adult culture, at least in the technologically advanced societies, is so pluralistic and so subject to change that transmission of the values of one or a few subcultures to an entire generation of youth becomes impracticable. Perhaps this impracticability is a blessing; universal acceptance of some values might well be more dysfunctional than is the rejection of such values so apparent in the society today. An argument can be made then for a new function for education: a dual role of transmitting what is, while consciously preparing the young for what might or should be.

In some of the models attention is given to the role of the educational system in our society, but in general there is insufficient or inadequate discussion of this crucial issue. How will candidates be helped to reach an understanding of this issue? How will they be offered opportunity to develop skills, for example, in coping with the ambiguities arising from the pluralistic nature of this society? If they are not given such opportunities, they are unlikely to be able to help their own future students cope with the problems created by the instability of a society whose values and structure seem to be undergoing rapid change.

> 4. Are behavioral objectives a comprehensive way of defining the tasks of an educational program? Does the sum of behavioral objectives equal the whole of teaching? Are there other objectives which need to be included which do not lend themselves to behavioral expression?

In accordance with the guidelines issued by the United States Office of Education, behavioral objectives are used in all of the models. In some of the proposals, the formulation of behavioral objectives serves as a frame for the model, and all outcomes are so expressed. Recognition of the limits of behavioral objectives is found in two models in statements that not all significant and desirable teaching attributes can be specified behaviorally and that these attributes must not be dismissed simply because they would not fit the mold. In another model, behavioral objectives are used to specify desired outcomes in children, and the choice of instructional strategy is left to the teacher. Although we recognize the value of behavioral objectives in focusing attention upon observable behavior, we question the usefulness of behavioral objectives and performance criteria for every teaching-learning activity. Three particular issues arise from uncritical use of behavioral objectives:

First, behavioral objectives are stated as predetermined outcomes. The outcomes of many learning situations, especially those involving mastery of skills or of particular content, can be set in advance. In such instances, performance-based objectives may well increase the efficiency of learning and reduce the incidence of failure by making what is expected of the learner clear. But there are other learning situations of an aesthetic or affective nature in which the outcome can not be predetermined without altering the nature of the experience. In these situations -- painting, reading a poem, experimenting with Cuisenaire rods, debating a current political issue -- it is the undergoing of the activity, the quality of the experiencing, that is of first significance. The quality of the product, while still important, is secondary. Expressive objectives are not easily stated in terms of performance criteria. Perhaps future developments will enable educators to state affective goals behaviorally; perhaps we will find that performance criteria remain inappropriate for some areas of human endeavor.

The second issue is closely related to the first. Because of the efficiency of behavioral objectives in some content and skill areas, their use has become an educational fad. As a consequence, there appears to be real danger that they will be misused. Behavioral objectives may do more harm than good if educators go to the extreme of attending only to what is easily measured. Many educational goals -- the self-actualizing individual, the democratic citizen, the self-directed student -- would be eliminated under this rubric, for the attainment of such goals cannot be measured in small, discrete units of behavior or of time. Some educational goals may take long periods of time for realization and cannot easily be objectified with present technology. This does not mean we should abandon such goals. There is a place for a faith in processes, in value commitments, in experimentation, even if it does not yet permit of objective evaluation.

The misuse of behavioral objectives may also be more subtle. In teaching or learning situations where several alternative strategies may produce the intended outcome, the behavioral objectives format may predispose educators to the one for which performance criteria are most easily formulated. We see this tendency at work in some of the proposals. We would argue that the choice among alternative strategies ought to take into account the criteria of individual needs, incidental learning, and overarching educational commitments. The model of the teacher as a hypothesis maker and tester would be more consonant with such criteria than the model of the teacher as a technician administering a prescribed treatment.

Third, research in the effectiveness of behavioral objectives as a learning tool is both minimal and inconclusive. Study may reveal that behavioral objectives are an oversimplification of the learning process. A single performance criterion may not capture the multidimensional nature of learning; a performance continuum may reflect this nature more accurately. We were disappointed to find no provision in the proposals for an evaluation of the effectiveness of behavioral objectives as a model of learning or as an organizing element in the curriculum. Such evaluation would seem essential in view of the reliance placed on behavioral objectives as an organizing element in the models. If teacher education is to be improved and revitalized, then the structure of the training program must be rigorously scrutinized.

5. Are there limitations to systems analysis which must be considered in determining its utility and value in education?

As a result of the guidelines set by the United States Office of Education, systems analysis, behavioral objectives, and computer technology are used to some extent in all of the models. As our group discussed the models, it became clear that although each of us could see advantages in the application of systems procedures and modern technology to education, we were also somewhat uncomfortable with the lack of attention given to the limitations and dangers involved in their use. This topic recurred in our evaluations of individual models and in our conference with the model builders.

It is clear that efficiency is one of the strong selling points of systems methodology: efficiency of resource allocation, tighter control of complex organizations, and more precise measurement of organizational goals and performance. When these factors are coupled with the language of systems technology, which shows its military-industrial origin, the impression is created that efficiency in "products", "resource allocation", and "deployment of personnel" are the central concerns of education. Dehumanization is at least implied when management and decision strategy receive more emphasis than the needs of the staff and of the children to be taught. Our concern is that technology, if not held under firm and deliberate control, might one day emerge as a subtle but inexorable policy determiner at the expense of more humanistic, though less economic concerns.

Another shortcoming of the systems approach used in most of the models is its self-validating nature. The feedback loops in the models maximize their efficiency at implementing existing policy; that very efficiency militates against policy change to adapt to social change. As an individual becomes demonstrably more efficient at a task, it becomes more difficult to convince him that his efforts may be misdirected. Provision for external input into the total systems loop at the policy level would be a necessary response to this problem.

The foregoing criticism should not be construed as a blanket rejection on our part of systems methodology in teacher training or education in general. We recognize, for instance, that such techniques make possible a degree of individualization which could not otherwise be achieved. It is our feeling that for all their promise, however, these tools also have limitations which require that they be subject to constant scrutiny. Systems analysis can not be a substitute for a philosophic framework of value commitments. Within such a framework, the systems approach becomes a means to the larger ends of the program.

6. How do the programs confront the realities of the new coalitions in communities? What guidelines are developed for reconciling professional goals with community goals?

Most of the models have as an integral part of their programs a coalition between the teacher training institution and other policy-making community bodies. This provision demonstrates the realization that if change is to occur in education, it will require more than just alteration in teacher training. Cooperation in the public schools, along with change in community concepts of education, are also essential if the usual pattern of teacher socialization is to be modified. It is laudable that many of the model builders faced this problem head on. Our concern is whether or not it has been dealt with adequately and realistically.

There are a number of school districts, mostly urban, which are closed systems highly resistant to change and outside influences. Can a teacher-education institution in such a location adopt an innovative teacher training program which is contingent upon local district cooperation? And if so, how?

Another problem in this area is the autonomy that colleges and college faculties have enjoyed historically. A substantial portion of this autonomy would be sacrificed if coalitions were formed with other institutions. All of the models provide for retraining of faculty in order to modify their behavior. When this provision is combined with the loss of autonomy involved in coalition, we feel that it will engender more resistance than the designers anticipate.

Increased militancy of teachers and teacher organizations is another factor to be considered. The role of such organizations in teacher education has not been dealt with adequately. Undoubtedly many and varied problems will arise when coalitions are attempted. Both intra-agency and inter-agency resistance will be formidable since many will feel that their autonomy, power, and prerogatives are being threatened. In this light, it would be desirable to have a clearly developed strategy to cope with impasse within agencies and between agencies. This need has not been dealt with adequately in any of the models.

In short, although we agree that inter-institutional coalitions will be necessary if change is to be effected, we question whether or not the designers as a group have given the political problems involved adequate attention.

> 7. Does it make a difference whether a program takes its departure from a holistic orientation or an atomistic one? If it does make a difference, what are the implications for teacher education? How prescriptive can and ought a teacher training program be?

Educators of teachers take a philosophical stance as they design programs for teacher education, but this stance is often implicit rather than explicit. Positions must be inferred from the unstated assumptions which underly the model and govern what is included and what is omitted from its parameters. From our reading of the proposals, it appeared that most of them proceed from a classical philosophical position. Most of the models are quite prescriptive: the behaviors which teachers ought to demonstrate are explicated; the proper organization of the elementary school is specified; knowledge is compartmentalized into the classic subject divisions. This prescriptiveness implies, perhaps unintentionally, a stable and static conception of knowledge. Teaching and learning can be subjected to logical or task analysis and broken down into its component activities; teacher trainees can come to understand the processes through carefully structured activities which have, for the most part, predetermined outcomes. A few of the proposals took an experimentalist philosophical position. From this standpoint, teaching and learning are conceived as simultaneously involving many processes.

Some processes may be more relevant than others at a given point in time, and so they emerge from experience as problems. Thus prospective teachers learn to attend to problems as they emerge in the classroom, form tentative hypotheses, test them, and then reassess them in terms of relevant feedback. Even those proposals which are based on a more experimentalist position, however, did not implement this position consistently. Perhaps, as has been suggested earlier, the language of system analysis and of behavioral objectives tends to predispose program designers toward outcomes which can be easily measured and to favor the set problem over the problematic.

We have two major concerns about the philosophical positions taken in the majority of the proposals. First, the classical position, particularly when combined with systems analysis and behavioral objectives, leads to an apparently atomistic approach. Objectives are organized hierarchically, and the student progresses systematically from one to another. We do not mean to argue against the use of analysis and system, both of which are clearly essential if teaching is to be conceived of as anything but a subjective art. However, obviously only some of the many aspects of teaching can be thus isolated for study. We are concerned that to the inexperienced teacher these aspects become the sum total of teaching. The criteria by which these aspects are isolated for study ought to be so related to overarching concepts of education that the trainees could consider alternate criteria and teaching paradigms. None of the models, for example, would prepare teachers to work in schools patterned after the British infant schools.

Second, the models tend to treat problems as givens, again a conception consistent with a classical philosophical position. A problem is set, alternative solution strategies are introduced, and the criteria for solution are established. If the majority of the problems posed for the trainees are set in advance, they may become adept at matching set problems with set solutions. Such training is likely to be dysfunctional in the classroom, for the teacher may tend to see those problems for which he knows the solutions. Problems will thus be improperly defined and solutions may be inappropriate. An alternate position would conceive of problems as emerging from experience; prospective teachers would thus need training in recognizing problematic situations and in defining central problems.

In general, the experimentalist view tended to be espoused in the introductory and rationale sections of the proposals, but the programs themselves appeared to be based upon a classical conception of knowledge. We would hope that the experimentalist position, which emphasizes the transactional nature of teaching, can be implemented more fully in the later development of the models. Systems analysis, if it remains open to the external environment and to change, can facilitate this implementation, for in a real sense it is the problem-solving method in new guise.

> 8. Is the provision in all of the models for the processes of change enough, or should the programs also be concerned with socially responsible change? How can the tension between education as cultural transmission and education for socially responsible change be resolved?

Recognition of the reality of change and the necessity of adapting to it is found in all of the models. Many of the models have built in strategies for responding to the changing needs of the trainees and to the demands of a changing society. Some model builders have designed experiences for confronting the processes by which individuals may undergo and understand change in personal and professional lives. These experiences are process-focused, and we see them as significant and highly desirable departures from current teacher training practice. But are these provisions sufficient preparation for change? Is our goal the preparation of teachers who can respond to demands for change? Or do we wish to prepare teachers to also initiate change? In attempting to answer these questions, we found ourselves confronting the fundamental issue of the role of the schools in our society.

Most of the model builders choose to induct teachers into the reality of a changing technological society and to retain traditional American values. Education thus serves to transmit the dominant values of American society in such fashion that future citizens, hopefully, can cope with new circumstances within the framework of accepted values. The strain engendered by this attempt tends to erode the traditional values either by reducing them to platitudes or by distorting their original meaning. We would question whether it is indeed possible to simply transmit existing values in our rapidly changing, pluralistic society. The widespread unease in our society and the challenge of its avowed values and institutions by our youth suggest that efforts to transmit the traditional values are indeed in question. Although we would not quarrel with the attempt to deal with the reality of rapidly accelerating change nor with the role of the school in transmitting culture, we would seek more than mere adaptability or indoctrination. Unconsciously held values are not easily subject to criticism. Yet one of the crying needs of our time is the development in individuals of the ability to criticize and reconstruct their values. Several of the models did not move beyond equating openness to innovation with preparations for change. But others did seek to educate teachers who would be agents of change, and in these models there was an awareness that the desired ends will vary with the community and conditions.

In a pluralistic society such as ours, social responsibility will be variously defined. The schools could assume a hands-off, neutral position and thereby avoid the heat of controversy. In our view, students must be given experience in value clarification so that, when confronted with choice, they can reach thoughtful, tentative decisions which they are willing to test and reassess. In order to provide this experience, the schools must recognize that the subcultures within our society offer different and in some instances mutually exclusive value commitments. Sensitivity to this pluralism, willingness to consider and explore other commitments, and respect for values other than one's own would seem to be minimum prerequisites for stability and community in our society.

Some of the model builders took bold, affirmative steps to equip their teachers with these prerequisites. We commend their courage in facing these controversial issues; we hope that their example will encourage other teacher training institutions to forsake "safe" neutrality on normative issues for a wide-ranging examination of what is meant by socially responsible change and a commitment to its initiation.

* * * *

The next section of this report will be an analysis of each model.

COLUMBIA UNIVERSITY

The major objective of this model is to facilitate the development of a teacher who will be an innovator, a teacher who has technical competence meshed functionally with personal characteristics of flexibility, commitment and secure self-knowledge. Such a teacher will have the skill and dedication to help create and test out new educational forms on a continuing basis. The model envisions teacher education and teaching as a continuing, integrated life process and not merely the accumulation of a fund of static knowledge. The model concerns itself with the continuing process of educational change and intends to prepare teachers to participate creatively as components of this change. Essentially the Columbia Model sees the school as a center of inquiry and teachers as creative innovators who facilitate the inquiry function.

Columbia has identified four roles of the teacher-innovator and the model proposes to prepare teacher candidates to function within a future oriented center of inquiry in these roles. They are:

1. The Institution Builder. Essentially this role envisions the teacher as functioning in concert with others to design complete educational programs and the organizational structures required to bring them into existence.

2. The Interactive Teacher. This is a role which requires the teacher to interact with children using creative strategies to make instructional decisions tailored to the characteristics and needs of the children.

3. The Innovator. This is defined as the ability to interact creatively with others to build educational settings which are completely new and in which innovation rather than imitation is the norm.

4. The Scholar. This role requires the teacher to specialize in one discipline until he knows the nature and modes of inquiry of that discipline and can apply this knowledge to his teaching.

These are the objectives of the model as well as they can be identified. It is most important to remember that the Columbia Model envisions the teacher as a flexible, innovative scholar functioning within an ever-changing matrix which is itself a model of the society in which the child lives. The teaching which occurs is in itself developmental and the children are vital contributors to the process.

Brief Summary of Columbia University Model

Given the preceding objectives, the methodology is to attempt to operate the teacher education program as a democracy with small, self-regulating units of students monitoring their own progress and administering the program to themselves with the assistance of faculty counselors. The faculty counselor modifies his role to provide an optimal educational environment for each individual according to the differential training model. (The differential training model is adapting the pace, complexity and organization of the learning environment to individual student needs.) The contact laboratory (school) is organized to provide teacher-candidates with opportunities for study, micro-teaching and experimentation rather than to socialize them to the school as it presently exists. The contact laboratory experience is extended over a long period of time in order to develop realistic skills, but is designed to discourage the teacher-candidate from believing that "realism" means accepting the school as it is today and keeping it the same.

The four major components which correspond to the objectives mentioned above are developed extensively and in depth. They are:

1. The Teacher as an Innovator: Recognizing that the educational system as it is currently operating tends to stabilize and fix the role

of a teacher, the program attempts to prevent stabilization and emphasize the value of innovation. The Teacher-Innovator component helps the student analyze the social system of the school and the ways in which it stabilizes itself and prevents change and innovative activity. The Teacher-Candidate works within the inquiry group to develop new teaching strategies which seek to emphasize and value change and through mutual support strengthen the innovation capacity of each. This is done through bringing teacher-candidates and in-service teachers together in mutually supportive educational experimentation. In every way possible, emphasis is placed upon innovation and creativity and the teacher-candidate is reinforced by peers and faculty.

2. The Interactive Teacher: The major measure of a teacher's success is the effectiveness of this face-to-face contact with students. The teacher must be able to interact with students so that he welds them together in communities of learners. To develop an interactive teaching atmosphere, the student is taught the range of strategies for making instructional decision. This is done through simulated teaching "games", a simulated school situation using data banks of information on real children and finally in a unit experiment with the student teaching real children.

The next phase is designed to teach the mastery of a range of teaching strategies, each derived from a theoretical position on teaching and learning. This includes small group teaching situations designed to induce productive thinking, achievement, structure procedure and finally to induce pupils to self-structure procedures. Many basic teaching strategies are taught.

The teacher-candidate is taught to be flexible in his approach to learning situations. This component is developed through child study using methods designed to sensitize teachers to the child's behavior. Role playing for the child is a significant factor and communication skills are emphasized. In addition, the teacher-candidate studies the social organization of the classroom and learns methods of structuring the organization and the impact that various teaching strategies have on classroom social structure.

3. The Institution Builder: Recognizing that education is a large-scale social enterprise, the teacher-candidate is taught how to restructure this enterprise so that it can best accommodate innovative teaching. This is done through school simulation wherein the candidates practice institutional decision-making and study strategies for developing the curricular, technological and social systems of schools. In small group teaching these skills are further developed, and are finally carried out in actual practice in the candidate-operated school which emerges into the Inquiry School.

4. The Teacher-Scholar: In developing competence as scholars, the teacher-candidates concentrate on the study of children and the study of teaching. The faculty advisor suggests strategies for major emphasis in each field and intensive work proceeds in direct contact with the school environment in order to develop and test hypotheses in the classroom. Cognitive and affective development in children are studied and conclusions are drawn which have a direct bearing upon the candidate's future development.

This entire program is designed to function in close contact with innovative schools and places relatively little emphasis upon university work per se. Continuous experimentation is stressed and it is intended to produce a flexible, innovative scholarly teacher.

Major Strengths

The Teachers College Model is an innovative proposal for the training of teachers. The special strengths of the program seem to be:

1. Differential training: A real attempt is made to adapt the program to the needs of the teacher candidate. He is permitted to pace himself through the program (and emphasize any area which may require reinforcement). Both self and peer evaluation are provided on a continuing basis, and feedback about the program structure will permit changes at regular intervals.

2. Development of Democratic Procedures: The concept of the inquiry group which consists of a small group of teacher trainees who together develop the major components of their program and pace themselves in a mutually reinforcing manner seems to be especially relevant to the development of good teachers. While there may be problems in actual practice, the inquiry group concept is worthy of consideration and experimentation.

3. Innovation: Major emphasis has been placed upon the development of a teacher who can be truly innovative. Through a series of experiences, the teacher trainee is encouraged to learn and apply teaching techniques in new and innovative ways. The trainee brought face to face with the child and the importance of studying each child and adapting education to the needs of the individual child is emphasized. This is a difficult procedure and will require intensive assistance from master teachers and other faculty; however, it is worth the effort and is to be encouraged.

4. Institution building: The concept of educational change is central to the model philosophy. Major emphasis is placed upon the need of the school to adapt to changing social pressures in the society. The teacher trainee is encouraged in learning the dynamics of institution building to meet these changing social pressures. The model postulates that in order to be effective, the school of tomorrow must be an integrated democratic community, adapted to continual change. The model does not specify the dynamics of this process, and much attention must be paid to this developmental aspect.

In addition to these strengths outlined above, it is necessary to raise some questions in regard to the Teachers College Model. These questions have in part been raised with the author of the model and in any actual application of the proposal would be resolved. However, the questions should be considered in relationship to any development proposal. The questions are:

1. How does an institution change the personality of an individual without assuming the unacceptable role of the moral determinist? The model specified that personality change of the prospective teacher is contemplated and indicates that an open interactive personality is the desired outcome. The question of trainee choice and involvement in the decision to change personality is not addressed. The problems of personality change within "normal" limits are many, and the moral considerations must be taken into account if indeed we believe in the democratic process. Furthermore, the major question of what type of personality actually makes the best teacher has not been researched in any satisfactory manner.

2. Can cybernetic simulation actually permit a teacher trainee to learn how to interact effectively with pupils? The Teachers College Model schedules significant segments of cybernetic simulation in the "Interactive Teacher" segment of the program. There can be no question concerning the usefulness of cybernetic application to many teaching and training tasks. However, it would seem that much more research might be required to validate the use of such devices for human simulation.

3. Can a trainee effectively learn and apply teaching strategies based upon radically different conceptualizations of the learning process? The model suggests that the trainees will learn to apply nine different teaching strategies based upon different theoretical concepts of how children learn. Since some of these theories are in opposition to each other, the implication is that the trainee will not have a theoretical position of his own. It is unquestionably important for the trainee to be exposed to a number of different learning theories. Yet it would seem to be unrealistic and perhaps undesirable, to suggest that a trainee should be willing to modify his teaching behavior so that he might use all theoretical approaches with equal effectiveness.

4. To what extent can and should the non-school community be involved in the educative process? Although the Teachers College Model is very strong in providing for the social structure and organization of the school community, there is little provision for general community involvement in the learning process. The model is dedicated to institutional as well as general change but does not specify how this change which takes place in the school is meshed with changes which take place in the larger community. It

would seem important to provide for general community involvement in the learning process as well as to specify those community indicators which might be used to trigger school institutional and learning change.

4. How can teacher training institutions provide for the development of change-oriented administration? The Teachers College Model view of the future posits continuous institutional change in education. School administrators generally have in the past been resistant to change. The model does not provide for the specifics of how change-oriented administrators can be developed for the schools in question. This point is probably not germane to the problem of developing a teacher training program per se. However, in terms of practical implementation of the program the question must be addressed.

5. What will be the implication for change in the teacher training institution? The Teachers College Model requires that major institutional change take place in the teacher training program. The implication of faculty change, adjustments of college courses as well as change in certification requirements are major. In fact, the adoption of the model would require fundamental restructuring of any teacher training institution in existence today. While these details are not required to be answered in the model proposal, they must be considered in any "next step" consideration.

The Teachers College Model sets new direction for teacher education. It is innovative as well as quite comprehensive. While the model does not conform to all of the specifications listed in the United States Office of Education's invitation, its divergence is considered to be positive. The Teachers College Model, with modifications and development, merits implementation.

THE COMFIELD MODEL-OREGON STATE SYSTEM OF HIGHER EDUCATION

If the aim of teaching is learning, then there should be evidence that teachers can bring about appropriate learning in children before they assume responsibility for it in the classroom. The aim of the ComField Model is the development of a teacher education program that generates this kind of evidence.

To realize this aim, the ComField Model specifies (1) that each prospective teacher demonstrate the ability, under both simulated and live classroom conditions, to effect changes in the behavior of pupils that reflect the outcomes desired for them. In addition, the ComField Model specifies (2) that each prospective teacher demonstrate that he can effectively perform the non-instructional tasks required of him in a school setting, for example, conferencing with parents or working with research and evaluation teams; and (3) that he demonstrate that he has integrated all professional competencies into a unique and personally relevant teaching style.

Procedurally, the ComField Model specifies that "instructional systems" will be employed to bring about professional competencies and their personalization; that instruction within these systems will be individualized with respect to point of entry into the curriculum, pacing, sequencing, and information processing preferences; and that a computer based information management system will be used to handle the frequent and diverse demands upon information created by the above. Two additional procedural requirements are specified: cost/benefit data is to be provided for all aspects of the program, and an adaptive mechanism is to be developed to insure the continuous modification of the program in light of evidence as to its costs, effectiveness, and appropriateness. A management model designed to implement these procedures within participating colleges and schools is specified.

Strengths

1. Performance criteria used in the model are stated in terms of learner behavior rather than specific teacher behavior. The typical performance criterion specifies the outcome behavior desired for a child with particular relevant characteristics (age, socio-economic status, race, past achievement, etc.). The methods used to achieve the desired learner behavior are determined by the individual teacher. Priority of learner behavior emphasizes the various strategies which teachers can use with different types of children.

2. By specifying at the outset that each prospective teacher will be expected to develop his own teaching style, the model recognizes what has long been claimed by educators: that there is an element of art in teaching. What works for one teacher may not work for another. In avoiding being overly prescriptive with teacher behavior, the model retains its emphasis on pupil behavior.

3. In providing for negotiation between the trainee and the college staff concerning the trainee's program, objectives and evaluation, the model encourages a personalized approach to professional competence. We feel that this is desirable for several reasons: First, concern for the needs and interests of the trainee provides an example or model for the trainee in his relationships with pupils. Second, emphasis on the importance of individual differences in skills, abilities and rates of learn-

ing, mitigates the possible dehumanizing effects of any highly organized, programmatic approach to teacher education.

4. One of the most impressive aspects of the Oregon Model is the change it has undergone in the past seven months. The original model published in October of 1968 by a consortium of institutions and agencies in the Northwest has been revised and improved considerably as the new Oregon Model dated May, 1969. The model was proposed as an adaptive one. The actual adaptability has, we feel, already been demonstrated by the growth and change in the model during Phase II of the United States Office of Education project. Hopefully, these accomplishments are an individuation of the possibilities inherent in the model for further improvement and adaptation.

5. The support and back-up functions necessary for the sucessful implementation of any new program have been especially well-conceived in the Oregon Model. We feel that this aspect of the model will be particularly valuable to small colleges which have limited resources and little experience in new programs utilizing modern technology.

Suggestions for Improvement

1. While student interests are given a great deal of attention, particularly through individual negotiation provisions in the model, we feel that the model should stress involvement of student trainees and graduates in the policy-adaptation function. This modification seems particularly critical at this point in time when students are demanding an increased voice in educational decisions affecting them.

2. College faculty requirements need further and more detailed specification, and in the in-service training of faculty might be planned

more carefully. There is some question as to whether the individual college faculties which must undergo change are best suited to plan and conduct in-service training programs completely on their own. The necessity for change in present faculty teaching behavior, and the means for achieving such change, deserve a great deal of attention. One possibility might be availability of an outside team to assist in faculty retraining in those schools which adopt the model. At the least, however, we feel the model should incorporate an inclusive and detailed set of guidelines in this area.

3. The Oregon Model makes extensive use of systems analysis and inter-agency coalitions; therefore, the concerns expressed in the introduction to these papers are appropriate to this model. It is our feeling that more attention to these areas would not be wasted; this is especially true for the coalitions problem. The possibility of impasse is not treated. We feel that a model for impasse proceedings could be useful in several portions of the model.

4. The model lacks specific provision for follow-up on all program graduates. Although some of the graduates would be accounted for through the in-service and advanced training provisions of the program, this would not account for those who have left the immediate vicinity of the training program. Knowledge of what happens to program graduates should constitute important in-put to the adaptive function of the model. Our feeling is that a comprehensive five-year follow-up on all graduates would be a real asset to the Oregon program.

5. The model provides for highly individualized programs for teacher trainees. While this is sound educational policy as presented in the

model, there is also danger that the student, working individually except for occasional contact with temporarily created groups, may never develop a sense of community with his peers. This has two major implications: First, feelings of isolation and estrangement from the immediate social group can be dysfunctional to the student, academically and personally. Second, if the student fails to experience during training strong association with other trainees in the same program, the program will have failed to provide for its graduates a "reference group" -- a group whose attitudes and values are incorporated by individuals for later reference as they meet new situations. The reference group may serve an important function for graduates when they have completed the entire program of training. It is in this early period of teaching, just following graduation, that many young teachers feel subject to the strongest pressures of occupational socialization, some of which strongly conflict with their training. If the graduate has strong identity with a group from his training period, he may be able to mediate such conflicts with greater success. We feel that the model might give more adequate attention to the preparation of trainees for the types of occupational socialization they are likely to encounter. The reference group is one approach to the problem. Others might include a kind of "reality" training -- use of techniques such as simulation and role playing to develop awareness of and abilities needed to meet the pressures of the actual teaching situation.

Since the establishment of basic long-term groups is in our view essential, we suggest that the model would be improved by more specific provision for the development of such long-term groups.

FLORIDA STATE UNIVERSITY

The Florida Model is planned to educate teachers for a rapidly-changing society. It maintains that teachers must first be broadly educated since only such persons will be able to make the increasingly difficult decisions required of teachers. It is also felt that the emerging role of the elementary teacher will require depth in at least one academic content area as well as high competence in utilizing numerous strategies; that the teacher must be flexible in his role adaptation in order to adjust to various educational environments. The model specifies a pre-service--in-service continuum for an in-built plan of renewal in order to further learning after teaching has begun, to combat erosion caused by day-to-day confrontation with hard reality, and to test out research findings or new practices in elementary education.

This model proposes the following components:

1. The teacher must be broadly educated: only broadly educated persons of high ability will be able to meet the demands of elementary teaching and make the increasingly difficult decisions required of teachers:

    a. The emerging role of the elementary teacher will require depth in at least one academic content area as well as a high degree of competence in utilizing a large number of teaching strategies.

    b. Teachers will have to be able to work effectively with other professional and para-professional personnel.

    c. The training program should be on a pre-service--in-service continuum.

    d. The teacher must be flexible in his role adaptation in order to adjust to various educational environments.

2. Five categories of teacher behavior are basic to all elementary teaching:

a. Formulation of objectives:
  - Stating objectives in behavioral terms.
  - Understanding theoretical considerations in formulating objectives.
  - Translating broad goals and educational aims into instructional objectives.

b. Selection and organization of content:
  - Understanding principles of organization and selection.
  - Analyzing current curriculum materials.
  - Selecting and organizing content.

c. Instructional strategies:
  - Understanding theory related to strategy selection.
  - Analyzing and practicing strategic moves.
  - Selecting strategies.
  - Executing strategies.

d. Evaluation skills and techniques:
  - Comprehending and applying psychometric principles, statistics, and standardized testing procedures.
  - Observing and measuring behavior.
  - Relating evaluation and planned objectives.
  - Interpreting evaluative data.
  - Practicing evaluative techniques.

e. Professional responsibility:
  - Being aware of the dimensions of professionalism.
  - Being aware of innovative materials and practices.
  - Applying results of educational research.
  - Applying self-analysis skills.
  - Understanding theories of group dynamics.

3. In-service program is an in-built plan of renewal:

a. To further learning after the teaching experience has begun.

b. To combat erosion caused by day-to-day confrontation with hard reality.

c. To test out research findings or new practices in elementary education.

The in-service program has three major objectives:

a. To expand concepts and improve skills already partially developed by trainees in the pre-service phase. Such concepts and skills relate to the role of the teacher in the teaching act, the nature of the subject matter and its use in teaching, and preactive, interactive and postactive aspects of teaching.

b. To develop new concepts and skills related to the total act of teaching, including instructional design, teaching skills, and evaluation.

c. To extend teacher behaviors to include those necessary for the assumption of full professional responsibility. These will have been treated very indirectly in the preservice phase. Here they can be observed directly and experienced directly.

4. There should be a specialization dimension in the model.

5. There should be provisions for admissions and screening procedures:

a. To show evidence of capability to meet performance criteria as stated.

b. To demonstrate a commitment to complete program and remain in teaching.

These two objectives are to be achieved by:

a. Measure of abilities

b. Measure of commitment

c. Measure of physical and mental health

6. The model program requires interdisciplinary team (staff) for realization.

a. Development of faculty members--motivation to change from usual roles.

b. Overall staff organization--that will insure availability of faculty required by specifications of model.

The model is explicit and consistent; however, the rationale to the parts of the model is obscured by the spiral organization of the two volumes. Volume I presents a cursory overview, leaving the reader with a number of questions which are answered most specifically in Volume II. Volume II is not generally available. This is a serious disservice to the Florida Model.

Professional experiences are self-directed and self-paced and are dependent upon a correspondingly innovative staff and the availability of staff to students. The staff development design provides many of the same experiences, with appropriate variations, for the professor-counselors as for the students. The trick is to convince experienced college educators that they need such experiences.

The inclusion of activities with children for candidates during the first two years is noteworthy, but depends upon the availability of children. Experiences which aim at the immediate application of theory and at progressive synthesis of technical skills also require children "upon demand". This may prove impossible for institutions which train a large number of teachers.

Although evaluation is based upon performance criteria for which there are objective specifications, the decision as to whether or not the observed behaviors are satisfactory is subjective. Thus the evaluation of such performance criteria will ultimately rest with the evaluators.

The model does not provide a wide range of alternatives for the teacher candidate in the pre-service phase and specialization comes in the in-service phase. The objectives specify operational behavior, although the student may design his own learning activity for the particular skill. Moreover the model does not provide an acquaintance with a broad spectrum of thought in educational psychology. The model builders felt it was more important to give the student some working, practical tools rather than to expose the student to conflicting theories of educational practice; hence the pre-service exposure is necessarily narrow.

The model is consistently behavioral for this paradigm is seen as expediting the acquisition of knowledge and skills. At a later stage the builders plan to identify measurable behavioral criteria for the in-service training phase. Although this model might be seen as overlooking the uniqueness of the individual because of the uniformity of performance criteria, emphasis upon the development of observational skills should focus attention on individual differences.

Florida's portal school concept, the vital in-service part of the model, holds great promise. We saw in the portal schools a potentially productive way of resolving tension between the pressures of on-the-job socialization and the newly acquired professional commitments of the beginning teacher. Another forward-looking feature of the in-service phase is the partnership of the selected school system personnel with those staffing the training institution. To have the master teachers of the portal schools also function as counselors for the teacher candidates seems most desirable.

The management control system utilizes a computer to monitor individual trainees' progress, making information available to staff and trainees. The University already has a PERT system which has been programmed to compute future needs in the areas of personnel and materials. The self-pacing components make such projections essential and desirable.

There is an explicit research posture. Data gathered during screening and admissions will be correlated with the follow-up program in order to examine possible relationships between teacher characteristics and teaching behaviors, making data on the trainees available for research purposes.

The openness of the model to the future is imaginative and hopeful, and it is an impressive attempt to educate the next decade's teachers.

UNIVERSITY OF GEORGIA

The rationale for the development of the Georgia education model (GEM) is based on the hypothesis that an effective teacher education program is built around the job which the teacher performs. In our discussions of the models, one of the persistent questions raised was whether a teacher education program should take a position on social issues, preparing its teachers to act as change agents on behalf of those positions, and thus projecting the future shape of society, or whether a program should transmit the present stated societal goals. GEM takes the position that schools are agents to pass on the values and knowledge of society. Thus, they see the job of the teacher as passing on the values and knowledge proposed by their model. GEM has stated the eight following values to be considered for the present and the future:

1. Respect for the worth and dignity of every individual.
2. Faith in man's capacity to make rational decisions.
3. Shared responsibility for the common good.
4. Moral and religious values.
5. Emotional health.
6. Competence, even excellence, for all.
7. Respect for the democratic process.
8. Pluralism.

While concern for the total organism is expressed in these values, it is difficult to see in the 2000 specifications that a balance is struck between the intellectual, social, emotional and physical growth of the child. A disproportionate number of the specifications are devoted to the cognitive development of both the teacher and the child. The affective area of personality, while a stated goal, is less well developed in the model.

The program lists six objectives for the development of an adequate teacher personality, e.g. "To develop and accept an accurate perception of self". We feel GEM is to be commended for their intention to develop a program concerned with teacher personality. It is important that attention be paid to this area. The resulting knowledge could help in training perceptive teachers who would be increasingly able to help youngsters become self-actualizing human beings. How this part of the program is to be implemented is not clear. Some provision is made for small, ongoing groups of students. Whether these groups are to be confrontation groups, under skillful leadership, to discuss personal problems or simply professional groups to discuss educational questions is left to question.

Use has been made of school boards, teacher organizations, and community resources in drawing up the goals to be implemented. It is not clear to what extent students have been involved in arriving at the 2000 specifications. However, provision has been made to change the modules as students progress in their program.

One unique feature of GEM is a job analysis of all related teaching personnel. Four categories have been differentiated: aide, teaching assistant, teacher with one area of competence, and specialist. The model includes a twenty-page appendix with these job descriptions. To train teachers to perform the job requirements, GEM has developed proficiency modules. A student may choose one of three or four paths to follow, or he may create his own module in order to fulfill the requirements for his chosen course of study. The student may also proceed as slow or as fast as he is able through the course of study. A mastery criterion is established for performance rather than the grading system. How these criteria are established is not clear. To offer an individualized program such as GEM aspires to, it would seem necessary to continually review the mastery criteria in view of the individual student's intent. We question whether any pretest, mastery learning, post-test format can have other than convergent outcomes. This is a caution on our part and not a criticism of GEM.

GEM starts with the school and its responsibilities in society, but it does not start with the child and his childhood. We feel too little attention has been paid to child development and the life space of the child. However, this area may be enlarged upon in the next phase of the project.

In general, GEM has specified detailed performance characteristics for their proposal. The corresponding materials, treatments, and techniques to develop these performance characteristics are not included. This model therefore should be considered as a framework rather than as a set of actual guidelines.

UNIVERSITY OF MASSACHUSETTS

The University of Massachusetts' proposal showed a responsiveness to the behavioral objectives call that went out from the Office of Education, and as such had certain built-in weaknesses and strengths.

The use of multiple instruction routes, determined by Cronbach's Aptitude Treatment Interaction, is an interesting innovation in teacher education. Here at last is an attempt to treat teachers as individual learners which should influence the way in which they, in turn, approach the cognitive and affective styles of their students.

We were also impressed by the variable entry and exit points in the program. The purpose of this variability is laudable, but we are concerned about the possibility of its actually occurring. As the program is set up, there are so many criteria to be met by the student teacher that if a student had to spend extra time meeting one criterion, the student could fall hopelessly behind. It may be a misinterpretation of the program to assume that all students will be expected to meet all basic criteria (there is a difference in the amount expected of a specialist and a generalist in each field); however, if this is the expectation, the number of criteria to be met seems to be very ambitious.

We were also impressed with the desire of the University of Massachusetts model builders to continue the in-service training of their graduates. We see the acceptance of responsibility for in-service education of program graduates as an important contribution to teacher education. Not only will it result in more effective teachers, but it will permit research into alternative methods of in-service education.

Given the increased mobility of teachers today, we are concerned with how these graduates will fare when they apply for teacher certification in other states requiring specific course content and hours. Although it will no doubt be possible to work with the Massachusett's certification agency, it may present potential problems in other states.

Another area of concern to us is the apparent absence of any contact with children during the course of the program. There are many micro-teaching experiences indicated, but they are of such short duration and are essentially divorced from classroom continuity. Micro-teaching does not provide the student-teacher with long-term contact with a group of children. Perhaps this contact is an omission missing only in the proposal and not in the conceptualization of the program; but we suggest that such contact be initiated early in the student-teacher's education and be continued throughout the program. The usual approach to student teaching which places prolonged interaction with children at the end of the program, does not seem to us the most efficient of effective methods of educating teachers in the classroom.

Although the University of Massachusetts Model did refer to the planned changes in the relationship between the School of Education and the rest of the university, it was notably weak in sociology. There is little reference to the socio-political problems teachers may have to face in implementing new approaches. For example, how is a teacher to cope with a principal or deal with the public when she adopts behavioral goals for her students? The University evidently understimates the problems of a teacher who seeks to transfer the type of training he received into the classroom situation itself. Similarly, we can forsee many problems for teachers who try to initiate other experiences such as sensitivity training, for their students. Parents may well resist this approach. Finally, and probably most important, there is almost no attention paid to retraining the school principals with whom these teachers will be working. This omission is critical, although we do realize that this is not the focal point of the program.

We feel that the scheduling of vast numbers of behavioral activities which must be evaluated by faculty members places unrealistic demands on faculty members. We realize that the computer can easily schedule this amount of activity, but the question is how much of the faculty's time will be consumed in watching behavioral performances rather than in educating teachers affectively.

The emphasis on micro-teaching tends to train the prospective teacher predominantly for small group dynamics rather than for large group activities. Although the teacher of the future may spend more time in small groups than her counterpart of the past and present, it is likely that he will also need a certain amount of experience with groups of from twenty to thirty children or with even larger groups.

The human relations emphasis of the program is an innovation in an important and much neglected area of teacher education. We have some concern that the human relations skills are to be taught as "technical skills" and will be used in manipulating teachers and students. However, when viewed as a program for facilitating personal growth, rather than as a collection of technical skills, the attention to this much neglected area seems exciting and healthy.

The University of Massachusetts Model has the possibility of making an exciting contribution to teacher education but its attainment may depend too much on the quality of the personnel. While the University of Massachusetts may have the necessary personnel for such a program, other institutions who attempt to initiate the program may not be so adequately staffed, and their failures in this part of the program could be serious and far-reaching.

The absence of child development theory, as well as of history, philosophy, or sociology of education, also seems to be a weak point in the program. Although a student teacher may learn a vast number of useful and workable techniques to use with children, if he does not understand their larger implications, he is not as well-prepared as he ought to be.

In closing, many of our reservations are concerned with feasibility rather than with objectives. We like the idea of providing teachers with varying avenues of preparation and with responsibility for their own development, but we do have some reservations about the scope and generalizability of the University of Massachusetts program. The specific performance criteria are based on the questionable assumption that the trainees will learn elementary skills and combine them into more complex, hierarchical forms of behavior. Possibly a more fruitful point of view would be to see the desired behavior as developing out of more generalized behavior, as a process of differentiation rather than of accumulation.

MICHIGAN STATE UNIVERSITY

In studying the Behavioral Science Teacher Education Model developed by Michigan State, we find many aspects of the program very promising for the future preparation of elementary school teachers. However, there are some problems and concerns that we feel should be considered in the development and utilization of such a program.

Several features of the model provide valuable contributions to the development of teacher education and offer many possibilities.

1. An element of the program that is particularly impressive to us is its completeness and extensiveness.

Since the program was developed by an interdisciplinary team of educators and specialists in many fields, it provides an extensive and integrated education that not only gives the trainee a well-balanced foundation in the many areas of knowledge and learning necessary for successful teaching, but also provides experiences in self-other affective development that helps the trainee become an aware, concerned, educated person.

2. The inclusion in the program of provisions for continual development of personnel, including teacher aides, assistants, and supervising personnel, and the recycling of these persons through various roles adds much to the totality of the program.

3. The "network of schools," as well as the emphasis upon cooperation and coordination among all the concerned institutions and individuals, providing for a coalition of institutions, teachers' organizations, state departments of education and local boards, appear to be necessary factors in the success of any teachdr training program.

4. An important feature of the Michigan State Model is its clinical approach. Through the cyclical process of the clinical approach, hypotheses and theories are developed, applied and tested in real situations, and then evaluated. Thus the hypotheses are continually modified and refined. The clinical approach provides for pupil-related activities and fosters improvement of teaching practices. The immediate application of theoretical knowledge central to the clinical approach seems to be an advantage to the trainee in the reinforcement and assimilation of knowledge.

5. Another aspect of the Michigan State Model is also involved most importantly in the clinical approach: that is, the provision for interaction with children which allows participation with them in various roles beginning very early in the program. We feel that it is vital that persons who intend to become elementary teachers should have experiences early in their training which give them the opportunity to discover their own strengths and weaknesses in working with children. So often in previous, more traditional programs experience with children comes only after the student has invested considerable time and effort in preparing to be a teacher, and he may then find that he does not enjoy or is not suited to this type of work.

6. In conjunction with these early experiences with children, the program provides for a continual Career-Decision Seminar. We feel that this provision contributes much to the program for it permits the student to reevaluate his decision to become a teacher and to select anew the paths he wishes to follow in his preparation.

7. The provisions for an extensive and complete managerial system

that utilizes five subsystems for separate but related operational and support functions appears to be a valuable aspect of this model. It is our opinion that this type of managerial system demonstrates the proper uses of technology and has considerable potential for efficiency and cooperative planning.

8. This managerial system also provides another commendable element in the program: utilization of the feedback information which involves the various subsystems as well as the students and faculty. The subsystems allow for feedback throughout the prospective teacher's progress during the program: in university experiences, in the clinical experiences, and even when the trainee is no longer associated with the university but is actually teaching in the elementary classroom. It is only through such continual feedback that the curriculum can be kept relevant and only through follow-up feedback after students have completed the program that the program's success can be evaluated.

9. The fact that the program has attempted to make provisions for individualization is another commendable characteristic of the Michigan State Model.

As a whole we find the Model to be very promising, but there are some points about which we are concerned and some questions we feel need to be considered if such a program is to be implemented.

1. One of our major concerns lies in the fact that the program requires a considerable departure from traditional roles on the part of the university faculty. The model builders are making the assumption that the staff, few of whom are likely to have been trained in how to teach

in the required manner, it going to learn through doing it, which is not reasonable in our opinon. Possible inertia on the part of untrained college professors seems to threaten changes in this kind of program. If this program is to be successful in achieving its goals and applying its underlying philosophy, it requires, in our opinion, considerable retraining of faculty members and a restructuring of the university. No provision is made for these changes in the present model.

2. Another possible handicap of this Model is the expense involved. Some of the strongest features of the program involve considerable outlay of capital in providing sophisticated computer technology, expensive audio-visual materials, and extensive professorial and managerial personnel, although in our conference, Dr. R. Houston indicated this was not a problem for Michigan State. Certainly, it would need to be considered by other institutions desiring to adopt the Model.

3. Although the modular approach attempts to provide flexibility and individualization, it is difficult for us to conceive how the various experience modules fit together to make up courses or a program for a particular individual. The means of integration need to be clarified and made more explicit, particularly for other institutions wishing to utilize this program.

4. A fourth concern that we have after our examination of this Model, as well as of other models, is related to the provisions made for training subject-area specialists for the elementary schools. Assumptions are made that schools of the future require more of these specialists than present-day schools. Even though current trends may indicate that

these assumptions are valid, the evidence is not conclusive. It seems more reasonable to suppose that teacher preparation for meeting the needs of all possible teaching situations would be better served by training all prospective teachers as generalists, with specialist training as an extension of general preparation.

UNIVERSITY OF PITTSBURG

The Pittsburg Model of teacher education presents not a theoretical dogma but a survival tactic for education in the form of a framework. It is an operational basis for teacher training which can help build stability into the elementary school in our rapidly changing environment. The stability of an elementary school built around this model will be based on its ability to meet complex and changing human and societal needs.

The model, as developed, is a framework based on the concept of individualization defined as:

> "...planning and conduction with each pupil programs of study and day to day lessons which are tailor-made to suit his learning requirements and his characteristics as a learner."

This kind of individualization is by definition based on a partnership. The student is an active participant in planning, as opposed to his usual passive role in the traditional authoritarian system. The teacher, as a member of a sharing partnership, necessarily becomes a learner. The definition implies openendedness in that the program is not planned for, but rather with, the student.

The model specifies five requirements for the development of an individualized model of teacher education: guidance, clinical setting, academic knowledge, professional knowledge, and teacher competencies. It emphasizes the relationship between an expanding knowledge base and these five requirements.

The implementation of these five requirements provides opportunities for altering the present educational system. When implemented, each component will be an integral part of the school community, opening it to interaction, and thus giving each participant an opportunity to play a productive and viable part.

In such a system, not only is the conceptualization of education altered, but the teacher himself is provided with the tools for individualizing instruction:

> "A static curriculum can be largely overcome or ameliorated by an insightful dynamic teacher, but a rigidly static teacher can sabotage, with the noblest of intentions, a forward-looking individualized curriculum. If we are genuinely bent on giving this matter our collective attention, we can identify and build individualized strands into the fabric of the school curriculum and of teacher education."

An example of how the model can build individualization, as defined, into the fabric of teacher education is the implementation of the teacher competencies requirement. In order to teach the competencies, both the education and related liberal arts faculties will have to become skillful in the nine competency areas and will have to supply evidence of mastery. This requirement is a departure from the system now in effect in colleges and universities in at least two ways: First, the student is taught by the methods he is to employ as a teacher. That is, the tools are internalized through his experiencing of them and, hopefully, by coming to value them. The second departure is from the traditional one-sided evaluation system. When both faculty and student are subject to evaluation, the authoritarian and directive role of the faculty is weakened. Thus, there is a possible basis for the development of a partnership between students and faculty.

A further example of how to integrate individualization into teacher education is provided by the implementation of the guidance function.

The model demands personal involvement on the part of the advisor. Implementation of this requirement would demand that advisors develop group process skill and the ability to become personally involved with their small groups of students.

The implementation of the clinical setting requirement would necessitate the development of coalitions. The model requires the development of such coalitions between the universities, school districts, teacher organizations, and state and federal agencies as a precondition to the development of the clinical settings. These partnerships would provide for the integration of the school into the larger context of community and society.

These examples indicate a radical change from the traditional conception of a teacher training program. The change is away from a prescriptive, authoritarian, isolated program towards an openended, process-oriented program, integrated into the fabric of the society.

There are many underlying problems which must be considered if a program like the Pittsburg Model is to grow and develop. Essential to its growth and development is the creation of four links within the university. These links are connections between the faculty groups within the schools of education and liberal arts, public schools involved with clinical settings, and research and development people. Without these links the growth of the information base and the flexibility of the teacher training program will be stilted. The growth of this information base is dependent on the development of a workable relationship between researchers and clinicians. At present, these two groups lack a common language and mutual professional respect. Until this situation is altered, the possibility of research relevant to classrooms, or of research utilizing all kinds of professional experience seems very unlikely.

Implementation of this model would alter many aspects of the educational system such as the structure of the university school of education, the university liberal arts program, and the traditional elementary school. Hopefully, it would develop links and communication between previously isolated groups such as experienced teachers, researchers, university professors, children, and teacher trainees.

Only as homogeneous, static systems of education are replaced by adaptable, dynamic systems can the ever-changing and complex needs of the individual living in a complex society and the needs of the society itself be met. The value of the Pittsburg Model lies in its commitment and ability to provide an adaptable, dynamic and viable system for teacher training.

SYRACUSE UNIVERSITY

The Syracuse Model strikes the evaluators as an ambitious and a far-reaching attempt to define and deal with central problems of teacher education. It seems innovative in the best sense of the word - squarely facing the uncertainty of the future and seeking to develop sensitive, hypothesis-making teachers who can respond to uncertainty with equanimity and responsibility. Perhaps the most distinctive dimension of the model is the integration of scientific and humanistic approaches to education. For example, behavioral objectives are specified where appropriate, but objectives which cannot be so specified, yet which are seen as significant, are retained in the model. Similarly micro-teaching is utilized as a means of developing sensitivity and awareness to one's own teaching rather than of mastering isolated technical skills. The thoughtful balance of technology and humanism permeates the program. In comparison with the excessive reliance upon technology to solve educational problems which we find in some models, this balance seems a particular strength of the Syracuse Model.

The particular strengths of the model flows from its dynamism. Rather than attempting to capture a particular approach to teacher education, the Syracuse project staff attempts to build change into the model. Ross Mooney's conceptualization of a life-giving system provides the theoretical frame for this attempt: such a system is open and responsive because the organism and the enviornment operate reciprocally. An intent-action feedback process is thus seen as essential in developing programs for transactional teacher education, for self-renewing teachers of teachers, and for training sensitive, self-directed teachers. Among the elements of the model design to accomplish this aim, the following seem most noteworthy.

The content of the teacher education program has been explicated in detail, and a rich variety of materials and experiences is outlined in the various modules. Despite the detail, however, the modules comprising each curricular component are regarded as tentative. As students work through the modules, changes are expected to occur in response to unanticipated needs and new information. Data necessary for design and redevelopment will be collected and stored by the information and evaluation support system.

Students will participate in program evaluation by assessing each module and by considering the effectiveness of the total program in the enabling seminars. Students will also, with the help of their counselor-advisor, plan and carry out the self-directed component of the program. Each student will define the nature of this component in terms of his own interests and qualifications; it will provide the "in depth" or specialize dimension of the teacher education program. Because such a program will require time and flexible use of resources, a student support system will be created in a Facilitation Center. Curriculum specialists, field experience consultants, audio-visual and duplication services, sensitivity group leaders, and counselor-advisors will be readily available to students in the Facilitation Center. Since the counselor-student relationship is central to the success of the individualized program, the characteristics of good counselors and suggested training procedures are outlined.

The long-term counselor-student relationship was another way in which flexibility was built into the program. The counseling relationship would permit, to a large degree, self-selection and self-screening of prospective teachers. Individuals of particular talents and diversified backgrounds, who might be unable to meet fixed admissions standards, thus becomes potential recruits for the teaching profession. A student ideally will receive constant, relevant feedback which will enable him to decide realistically whether or not teaching was for him. The student can explore the various options within the educational field and can, with the counsel and support of his advisor, begin to develop and individualized teaching style and a commitment to his profession. The Syracuse Model provides, through the self-directed component and the sounselor-student relationship, time for the reflection and experience necessary to develop teaching style and professional commitment. The provision of enabling seminars and the placement of students in groups during the resident year seems implicitly to recognize the need for an affiliative group which will aid new teachers in resisting on-the-job socialization and in developing, through peer interaction, individual teaching styles.

The Syracuse project staff also attempts to think through the relationships between the university, public schools, research centers, and industry. A relationship among equals is viaualized, based upon mutual responsibility in planning, implementing, and assessing teacher education programs. One of the primary roles of the organizational support system is to facilitate change from programs designed unilaterally by the training institutions to collaboration in designing teacher education programs.

The philosophical base for the program, although deliberately eclectic, is well articulated. The broad philosophical positions, which bridge several schools of educational thought, is justified on the grounds that at this time no one can say with any confidence what is best or will be best in a particular educational situation. American society is pluralistic, and the future is uncertain. Prospective teachers will be best served by becoming acquainted with a wide range of alternatives and by formulating their own hypotheses and then testing them in the real world of the schools. This pluralistic approach can be interpreted as a strength, if students are to be sensitized to the pluralism of American society and to the range of options available to teachers or as a weakness, if students are to view this approach as a means of avoiding value issues or of manipulating students. The Syracuse project staff hopes that teacher training institutions will adopt the first use of the pluralistic approach.

All of these features appear consistent with the desire to build change into the model and to sensitize prospective teachers to themselves as persons and to the wide range of alternative propositions which can be tested in teaching. We applaud the use of the hypothesis-testing, problem-solving model, for it permits a holistic approach to teacher education and attention to those problems which are differentiated from the totality of teaching-in-process rather than abstracted in advance.

Among the weaknesses of the model are its failures to confront the difficult problems arising from retraining the university staff. Yet without such professional up-dating, the program cannot be implemented. The model did not provide for the systematic follow-up of program graduates; such summative evaluation is essential if the intent of the program is to be judged by its outcomes. Only perfunctory attention is given to the liberal education background of teachers and its place in the total undergraduate sequence. The liberal arts component, as outlined in the model, does not appear sufficient to prepare elementary teachers as generalists. Although the involvement of the teacher trainees in program evaluation is clearly defined, their participation in policy-making is not. Such an omission seems inconsistent with the attempt of the Syracuse project to foster initiative and self-direction in prospective teachers. It is our view that students ought to participate in making policy.

We also note other potential problems. The module organization does indeed provide flexibility and opportunities for self-directed learning, but it can also fragment the student's experience. We question whether the enabling seminars will be sufficient to provide curricular integration and a cohesive group life. Another practical problem is posed by the wide focus of the model. Its delicate balance can easily be over-thrown by implementers who do not share the value positions of the model builders or who concentrate on one component to the detriment of others. More fundamentally, the nature of elementary education has to be inferred from the objectives for elementary school teachers. The conceptions of the young child as a person and as a learner which underlie the model appear to be implicit; in our judgement such conceptions should be explicit.

Otherwise central questions concerning the purposes of elementary education and the rights of children will not be answered.

In sum, however, the Syracuse model takes a bold, fresh approach to teacher education and seeks to utilize the latest technology and scientific knowledge to create a self-renewing and humanistic teacher education program.

UNIVERSITY OF TOLEDO

The stated goals of the Toledo project are noteworthy. They were adopted from a list of goals developed by the Committee on Equal Education, State Department of Education, Harrisburg, Pennsylvania. These goals reflect the problems which society faces in the world of today and tomorrow. These goals include:

1. Each teacher should be prepared to employ teacher behaviors which will help every child acquire the greatest possible understanding of himself and an appreciation of his worthiness as a member of society.

2. Each teacher should be prepared to employ teacher behaviors which will help every child acquire understanding and appreciation of persons belonging to social, cultural, and ethnic groups different from his own.

3. Each teacher should be prepared to employ teacher behaviors which will help every child acquire, to the fullest extent possible for him, mastery of the basic skills in the use of words and numbers.

4. Each teacher should be prepared to employ teacher behaviors which will help every child acquire a positive attitude toward school and toward the learning process.

5. Each teacher should be prepared to employ teacher behaviors which will help every child acquire the habits and attitudes associated with responsible citizenship.

6. Each teacher should be prepared to employ teacher behaviors which will help every child acquire good health habits and an understanding of the conditions necessary for the maintenance of physical and emotional well-being.

7. Each teacher should be prepared to employ teacher behaviors which will help every child acquire opportunity and encouragement to be creative in one or more fields of endeavor.

8. Each teacher should be prepared to employ behaviors which will help every child understand the opportunities open to him for preparing himself for a productive life and should enable him to take full advantage of these opportunities.

9. Each teacher should be prepared to employ teacher behaviors

which will help every child understand and appreciate as much as he can of human achievement in the natural sciences, the social sciences, the humanities, and the arts.

10. Each teacher should be prepared to employ teacher behaviors which help every child to prepare for a world of rapid change and unforseeable demands in which continuing education throughout his adult life should be a normal expectation.

In spite of the fact that the project intends to suggest definite kinds of teacher performances which can be observed and measured in behavioral terms to determine the teachers' progress toward each goal, the link from some of the goals to the 818 specifications of the project is weak. Goals number three and nine are well developed. They deal with subject matter and content. Goal number two is developed in as much as it deals with information. The feeling level of this goal is not dealt with. The other goals, which are related to the affective domain and are less measurable in behavioral terms, are not as well developed in the specifications. In goal number five, "to help every child acquire habits and attitudes associated with responsible citizenship" we might expect to see a unit viewing our planet as one ecological unit where decisions that we make affect the total planet's welfare. This does not occur. The model seems to view responsible citizenship as getting on well in whatever educational framework is provided.

The Toledo project provides for the training of all school-related personnel from pre-school through eighth grade. A student teacher can choose which course he will follow and make some changes along the way. But the goal of individualization of education does not seem to be met as well as it might be. The students are not allowed to prepare a course of study or to find out how they best process information, thereby learning that children also process information in many different ways. Rather, once the students have chosen a course of specialization, they must proceed along that path.

The position paper of Klausmeier, et al provides an excellent explanation of and a rationale for the multi-unit school around which the Toledo project centers and teachers are to be trained solely for this kind of specialized team teaching. All of the units from pre-school to eighth grade are grouped in three age levels. Each unit has 125 children and five teachers plus an aide. Developmental differences in children's abilities to relate to a large number of people or to move from center to center are not considered in this paper. Child development study also seems to be lacking in the teacher training courses. Thus we might raise the question as to the appropriateness of this kind of organization for children of any age and, particularly, for very young children.

The position paper on Educational Technology by Trzebiatowski is an excellent review of the field today as well as a projection to the future. Educational technology needs to be understood and used as a tool to implement a well-formed educational philosophy. Otherwise, the technology can become an end in itself. The Toledo project has provided for the training of personnel to use these technical tools within the context of its organization.

At the present time, during the first phase of their project, the Toledo group has not considered how they will work with community planners. Neither local teacher groups, parent groups, or community groups are considered in the implementation. It may be that in the next phase of their study they will develop ideas about how their schools will be instituted in various parts of the country.

This project is the result of many people's ideas. The selected specifications are stated in a clear format. There can be no question about the content, major subject area, topic, target population, behavioral objectives, treatment, materials, or evaluation. The accumulated effect of these specifications seems to be not a philosophical point of view, but rather an organizational plan.

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